

REMARKS

I. STATUS OF THE CLAIMS

Claims 6 and 17 are canceled herein.

In view of the above, it is respectfully submitted that claims 1-5, 7-8, 14-16 and 18 are currently pending.

II. REJECTION OF CLAIMS 16-18 UNDER 35 USC 102(E) AS BEING ANTICIPATED BY UEMURA (US 6,650,063)

Claim 16 recites a gas discharge panel substrate assembly comprising: (a) electrodes formed on a glass substrate; (b) a dielectric layer made of a sheet frit glass formed on the substrate by baking; (c) an intermediate layer formed on the dielectric layer and shielding vacuum ultraviolet light from a discharge space, the intermediate layer being made of at least one compound selected from the group consisting of an Al compound, a Y compound, a Zn compound, a Zr compound, a Ta compound and SiC; and (d) a protective layer covering the intermediate layer and made of MgO.

With the use of a dielectric layer made of a sheet frit glass formed by baking, a residue remains. This residue permeates out to the discharge space and is gasified by photolysis by UV generated by discharges. The gasified residue has a problem that it causes the phosphor layer to deteriorate. See, for example, page 6, line 18, through page 8, line 20, of the specification.

The present invention as recited, for example, in claim 16, is directed to such problems. More specifically, to address these problems, the present invention as recited, for example, in claim 16, provides the recited intermediate layer formed on the dielectric layer and shielding vacuum ultraviolet light from a discharge space, and the recited a protective layer covering the intermediate layer and made of MgO.

Uemura does not specifically disclose that the dielectric layer of Uemura is made of a sheet frit glass formed on the substrate by baking.

Moreover, Uemura does not disclose or suggest the above-described problems associated with such use of a sheet frit glass formed by baking. Moreover, Uemura is not directed to solving such problems. Accordingly, it is respectfully submitted that Uemura does not disclose or suggest the present invention as recited, for example, in claim 16.

In the rejection, the Examiner asserts that, in Uemura, "TiO₂ is layered in at least 3 μ m thick and therefore has an ultraviolet shielding function".

However, it is respectfully submitted that no portion of Uemura discloses or suggests that the TiO₂ layer of Uemura has an ultraviolet shielding function, or indicates any reason for

providing ultraviolet shielding. Moreover, there is nothing in Uemura that indicates that the thickness of the TiO₂ layer provides ultraviolet shielding. Instead, Uemura discusses that the number of cracks in the device of Uemura can be reduced in accordance with the thickness of the protection layer which, in some embodiments of Uemura, includes a TiO₂ layer. See, for example, column 3, lines 61-67, of Uemura.

Moreover, in Uemura, TiO₂ is selected for use in the protection layer for its thermal expansion coefficient, and not for any reasons related to ultraviolet shielding. See, for example, column 3, lines 35-38; and column 9, lines 1-7, of Uemura.

Therefore, if the Examiner continues to assert that the TiO₂ layer of Uemura provides an ultraviolet shielding function, it is respectfully requested that the Examiner provide a specific reference or indicate a portion of Uemura which clearly supports this assertion.

In addition, please note that claim 16 is amended to recite the intermediate layer being made of at least one compound selected from the group consisting of an Al compound, a Y compound, a Zn compound, a Zr compound, a Ta compound and SiC. Uemura only discloses the use of TiO₂.

Although claim 16 is amended herein, the Applicants do not admit that the TiO₂ of Uemura has an UV shielding function.

In view of the above, it is respectfully submitted that the rejection is overcome.

III. REJECTION OF CLAIMS 1-8, 14 AND 15 UNDER 35 USC 102(E)
AS BEING ANTICIPATED BY UEMURA OR, IN THE ALTERNATIVE,
UNDER 35 USC 103 AS BEING OBVIOUS OVER NAKADA (US 2003/0030375)
IN VIEW OF UEMURA

Various embodiments of the present invention aim to solve a problem that occurs when a film formed by a CVD method (hereinafter referred to as CVD film) is used as the dielectric layer.

The CVD film tends to have a residue remaining in the film. This residue permeates out to the discharge space and is gasified by photolysis by UV generated by discharges. The gasified residue has a problem that it causes the phosphor layer to deteriorate. See, for example, page 6, line 18, through page 8, line 20, of the specification.

The inventors of the claimed invention are of the opinion that such problem itself was not known before and the problem was found by the present inventors for the first time. The present inventors found that this problem can be solved by adding a barrier function to the protective layer or the intermediate layer that covers the CVD film so as to protect it from the UV emitted from the discharge space, and thus achieved the claimed invention.

The present inventors believe that the combination of the dielectric layer of CVD film and the ultraviolet shielding of an MgO protection layer is not disclosed anywhere in the cited references and is very unique. See, for example, page 7, line 6, to page 9, line 2, of the present application.

Uemura teaches that an intermediate layer of TiO_2 is interposed between the dielectric layer and the MgO film.

However, Uemura has no suggestion on the unique combination of the CVD film and the protective or intermediate layer having an ultraviolet shielding function.

* * *

Please note that independent claim 1 specifically recites that the dielectric layer is a CVD film. Independent claim 5 recites somewhat similar language. From the Examiner's comments in the last paragraph on page 3 of the Office Action, it appears that the Examiner believes that the recitation in claim 1, that "the dielectric layer is a CVD film", is a product-by-process claim limitation. Therefore, the Examiner does not give weight to the limitation. The Examiner specifically refers to MPEP 2113.

However, as indicated above, a problem that occurs when a CVD film is used as the dielectric layer. More specifically, as indicated above, the CVD film tends to have a residue remaining in the film. This residue permeates out to the discharge space and is gasified by photolysis by UV generated by discharges. The gasified residue has a problem that it causes the phosphor layer to deteriorate. See, for example, page 6, line 18, through page 8, line 20, of the specification.

Therefore, it is respectfully submitted that a dielectric layer being a CVD film, as recited, for example, in claim 1, has different characteristics than various other types of dielectric layers. Accordingly, it is respectfully submitted the recitation of the "CVD film" in independent claims 1 and 5 must be given weight by the Examiner.

Once this limitation is given weight by the Examiner, it is respectfully submitted that the above arguments patentably distinguish over Uemura.

* * *

Please note that claim 1 specifically recites that the protective layer includes MgO and at least one compound selected from the group consisting of an Al compound, a Y compound, a Zn compound, a Zr compound, a Ta compound and SiC *having an ultraviolet shielding function*. See also the limitations of claim 5 relating to an ultraviolet shielding function.

On page 3 of the Office Action, the Examiner asserts that, in Uemura, "the protection layer has a bi-layer structure where it includes both MgO and TiO_2 . Further, TiO_2 is layered in at

least 3 μm thick and therefore has an ultraviolet shielding function".

However, it is respectfully submitted that no portion of Uemura discloses or suggests that the protection layer of Uemura has an ultraviolet shielding function, or indicates any reason for providing ultraviolet shielding. Moreover, there is nothing in Uemura that indicates that the thickness of the TiO_2 layer provides ultraviolet shielding. Instead, Uemura discusses that the number of cracks in the device of Uemura can be reduced in accordance with the thickness of the protection layer. See, for example, column 3, lines 61-67, of Uemura.

Moreover, in Uemura, TiO_2 is selected for use in the protection layer for its thermal expansion coefficient, and not for any reasons related to ultraviolet shielding. See, for example, column 3, lines 35-38; and column 9, lines 1-7, of Uemura.

Therefore, if the Examiner continues to assert that the TiO_2 layer of Uemura provides an ultraviolet shielding function, it is respectfully requested that the Examiner provide a specific reference or indicate a portion of Uemura which clearly supports this assertion.

In addition, please note that "a Ti compound" is deleted herein from claim 1. Therefore, it is respectfully submitted that Uemura is no longer an appropriate reference for rejecting the claims, because Uemura only discloses the use of TiO_2 .

Although "a Ti compound" is deleted from claim 1, the Applicants do not admit that the TiO_2 of Uemura has an UV shielding function.

* * *

In view of the above, it is respectfully submitted that the rejection is overcome.

IV. REJECTION OF CLAIM 18 UNDER 35 USC 103 AS BEING UNPATENTABLE OVER UEMURA

The above comments for distinguishing over Uemura also apply here, where appropriate.

In view of the above, it is respectfully submitted that the rejection is overcome.

V. CONCLUSION

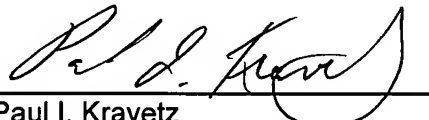
In view of the above, it is respectfully submitted that the application is in condition for allowance, and a Notice of Allowance is earnestly solicited.

If any further fees are required in connection with the filing of this response, please charge such fees to our Deposit Account No. 19-3935.

Respectfully submitted,

STAAS & HALSEY LLP

Date: November 29, 2005

By: 
Paul I. Kravetz
Registration No. 35,230

1201 New York Avenue, NW, Suite 700
Washington, D.C. 20005
Telephone: (202) 434-1500
Facsimile: (202) 434-1501